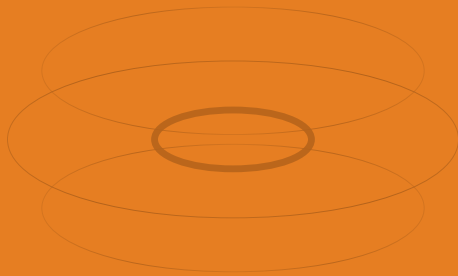


OWNER

Construction HSE Plan

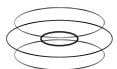


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TORUS

[REDACTED], [REDACTED] County, [REDACTED]

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ISSUE SUMMARY AND APPROVAL

This page records each issue of CON-RPT-003. The preparer, reviewer and approver sign for each revision.

Rev.	Date	Issue purpose	Description
A	2026-09-29	Issued for Review	First issue

Contributors

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1. INTRODUCTION

1.1. PURPOSE AND SCOPE

This plan sets the minimum health, safety and environmental (HSE) requirements for the construction, testing, tie-in and commissioning of the [REDACTED] [REDACTED] and its outlet lateral. The Contractor shall submit a site-specific HSE plan that meets or exceeds it before mobilization, as a submittal under [REDACTED] SPC-SPC-001. Where this plan and a regulation differ, the more protective requirement applies.

Three hazards set this site apart from ordinary civil construction, and most of this plan exists to control them:

1. The live, high-pressure 24-inch trunkline of [REDACTED] (the receiving pipeline operator), about 60 ft north of the north fence (maximum allowable operating pressure 1,200 psig, HOLD H-04), where the hot tap and the lateral connection are made.
2. Hydrostatic tests at 2,160 psig or more, which store enough energy to injure people well beyond the test section if a component fails.
3. The introduction of natural gas at up to 1,440 psig into a station that is still a construction site, during purging, gas-in and commissioning.

1.2. EXCLUSIONS

The receiving pipeline operator's own work (the hot tap and the tap valve) is carried out under its safety program. This plan governs the Owner's Contractor, its subcontractors and visitors.

1.3. REFERENCES

1. 29 CFR 1926, Safety and Health Regulations for Construction, including Subparts C, D, E, F, J, K, M, P, AA and CC; 29 CFR 1904, Recordkeeping.
2. 49 CFR 192 Subpart N, Operator Qualification; 49 CFR 199, Drug and Alcohol Testing; 49 CFR 191, Reporting.
3. [REDACTED] Underground Facilities Damage Prevention Act, 63 O.S. Section 142.1 et seq..
4. API RP 2201, Safe Hot Tapping Practices; NFPA 51B-2019, Fire Prevention During Welding, Cutting and Other Hot Work; NFPA 70E-2024, Electrical Safety in the Workplace.
5. ASME PCC-2-2022, Article 5.1, Pressure and Tightness Testing; ASME B30.5, B30.9 and B30.20.
6. [REDACTED] Department of Environmental Quality radiation protection rules for industrial radiography.
7. [REDACTED] CON-RPT-001, Construction Execution Plan; [REDACTED] CON-CAL-001, Critical Lift Plans; [REDACTED] SPC-SPC-001, 007, 008, 011, 012 and 018; [REDACTED] REG-RPT-003, Environmental Desktop Review; [REDACTED] CIV-RPT-002, Stormwater Pollution Prevention Plan; [REDACTED] PIP-DWG-004, [REDACTED] Tie-in and Outlet Lateral; [REDACTED] MEC-CAL-003, Hydrostatic Test Calculation.

2. ORGANIZATION AND COMPETENCE

2.1. RESPONSIBILITIES

Everyone on site has the authority, and the duty, to stop work that is unsafe, without reprisal. Table 2-1 sets the specific responsibilities. The receiving pipeline operator's representative holds stop-work authority for all work in its right-of-way, because that is where a mistake would damage a facility the Owner does not control.

Table 2-1: HSE Responsibilities

Role	Responsibilities
Owner's Representative	Stop-work authority; approves the Contractor's HSE plan; issues permits to work after gas-in; chairs the pre-startup safety review
Owner's HSE advisor	Audits, participation in incident investigations, monthly HSE review
Contractor's construction manager	Accountable for HSE performance; provides the resources for this plan
Contractor's HSE lead (full time)	Orientation, permits, audits, job safety analysis review, incident reporting, training records
Competent persons	Excavation, fall protection, scaffolds, confined space, cranes (lift director)
Receiving pipeline operator's representative	On site for all work in its right-of-way or near the trunkline; stop-work authority there
All personnel	Stop-work authority for any unsafe condition

2.2. ORIENTATION AND TRAINING

Every person, including visitors, shall complete a site orientation before entering the site. The orientation covers the site hazards (the live trunkline, hydrotest zones and gas-in phases), the emergency plan and muster points, stop-work authority, the job safety analysis and permit system, personal protective equipment, environmental constraints from REG-RPT-003 and the stormwater plan, incident reporting, the drug and alcohol policy, excavation rules, radiography signals and the weather procedure. Visitors shall be escorted at all times. Table 2-2 lists the minimum training.

Table 2-2: Minimum Training

Training	Required for
OSHA 10-hour construction	All craft
OSHA 30-hour construction	Supervisors and foremen
First aid, CPR and AED	At least one per crew and two on site at all times
Excavation competent person	Excavation foremen
Confined space entrant, attendant and supervisor	As assigned

Training	Required for
Qualified rigger and signal person; accredited crane operator certification	Lifting crews
Hot work and fire watch	Welders and fire watches
Gas awareness and four-gas monitor use	Everyone working after gas-in
NFPA 70E qualified person	Electricians working on or near energized equipment
Radiation safety	Radiographers and assistants
Operator qualification for covered tasks (Section 11)	People performing covered tasks

2.3. PERSONAL PROTECTIVE EQUIPMENT

The minimum is a hard hat, safety glasses with side shields, safety-toe boots, high-visibility clothing, gloves suited to the task, and hearing protection above 85 dBA. Flame-resistant clothing to NFPA 2112 is mandatory for everyone inside the fence from the first introduction of nitrogen or gas, and for all work in the excavation on the operator's right-of-way, because a flash fire is the credible consequence of a release in those places. Welding protection shall follow ANSI Z49.1.

3. JOB SAFETY ANALYSIS AND PERMITS

3.1. JOB SAFETY ANALYSIS

A written job safety analysis shall be prepared for each task before work starts, reviewed by the foreman and crew at the work location, and signed by every crew member. It shall be redone when the scope, crew, location or conditions change, reviewed daily, kept at the work location and filed with the daily report. The Owner's inspector shall review the analysis for each high-risk task in Table 3-1 before that work starts.

Table 3-1: Key Tasks, Hazards and Controls

Task	Main hazards	Key controls
Excavation near the trunkline	Line strike, gas release, fire, cave-in	One-call ticket; operator's locate and representative; hand or vacuum excavation in the tolerance zone; no machine digging inside the operator's limit (Section 4); protective system; gas monitoring; spotter
Trenching for station piping and the lateral	Cave-in, falls, struck-by, utilities	Daily competent person inspection and after rain; sloping or shielding; spoil 2 ft from the edge; ladders within 25 ft
Critical lifts of H-101, SK-110 and V-101	Crane overturn, dropped load, contact with piping	Accepted lift plan; mats; exclusion zone; tag lines; wind limit; lift director
Welding and cutting before gas-in	Fire, burns, fumes, ultraviolet light	Hot work permit; extinguishers; screens; ventilation
Hot work after gas-in, such as thermite welds on live piping	Ignition of gas	Continuous gas monitoring from 0 % of the lower flammable limit (LFL); fire watch; Owner's permit (Section 5)
Hydrostatic testing	Stored energy release, whipping hoses, water injection	Exclusion zone (Section 7); restrained hoses; calibrated gauges; staged pressurization
Radiography	Ionizing radiation	Boundary at 2 mR in any one hour; signals; scheduled when the area is clear
Nitrogen purge and pre-pressurization	Asphyxiation, cold burns, overpressure, cold metal	Oxygen monitors; vents to safe locations; regulator and relief on supply; metal temperature checks (Section 9)
Gas-in	Gas release, fire, overpressure	Approved procedure; pre-startup review; exclusion zone; gas detectors; ignition control
Blasting and coating	Dust, noise, chemicals	Respiratory protection; enclosure; safety data sheets; waste management
Electrical energization	Arc flash, shock	Energized work permit; lockout and tagout; arc-rated equipment to the labels

3.2. PERMITS TO WORK

Permits are required for hot work, confined space entry, excavation (with the one-call ticket and the operator's consent where applicable), critical lifts, energized electrical work, pressure testing, radiography, lockout on Owner-furnished equipment with stored energy and, after gas-in, any work on or near gas-containing equipment. The Contractor issues permits until gas is first introduced; from then on the Owner issues all permits, because the Owner then operates a live facility and is responsible for its isolation.



4. EXCAVATION NEAR THE LIVE TRUNKLINE

The following rules apply to all excavation within the operator's right-of-way (Y = 235 to 285 in plot coordinates) or within 50 ft of the trunkline.

1. **One-call.** Every excavation shall have a one-call notification at least 48 hours before digging, excluding weekends and legal holidays. The ticket number and valid dates shall be kept at the dig, and a new notification made if marks are lost or the ticket expires.
2. **Operator notice and presence.** The operator shall be notified at least 72 hours before the work, in addition to the one-call, and its representative shall be on site throughout. Its written consent (encroachment or crossing agreement) shall be in hand (HOLD H-04).
3. **Tolerance zone.** Within the tolerance zone of the facility (its width plus 24 in on each side under the
Underground Facilities Damage Prevention Act) excavation shall be by hand or by vacuum until the line is exposed and its location, depth and orientation are confirmed.
4. **Machine digging.** No mechanized excavation shall take place within 10 ft of the trunkline, or the distance the operator requires if greater (HOLD H-04), without the operator's written release after the line is exposed. Within 25 ft, buckets shall be smooth-edged.
5. **Crossing and loading.** Equipment shall cross the trunkline only at crossings the operator approves, with mats or earth fill to its cover and load limits (HOLD H-04). No spoil, stockpile or crane shall be placed over the trunkline.
6. **Exposed line.** An exposed trunkline shall be supported as the operator requires and shall never be struck, undermined, lifted or pushed. Any contact, even without visible damage (coating damage counts), shall be reported at once to the operator and the Owner.
7. **Gas monitoring.** Any excavation within 50 ft of the trunkline or of gas-containing Owner piping shall have continuous four-gas monitoring, alarming at 10 % LFL and at 19.5 % oxygen.
8. **Release.** On a gas release, workers shall stop work, shut down equipment in place if that can be done safely, evacuate upwind to the muster point, call 911 and the operator's emergency number posted at the dig, and keep people away. Nobody but the operator shall operate its valves.

5. HOT WORK NEAR LIVE GAS

Hot work near live gas is controlled by the limits in Table 5-1. The 35 ft radius follows NFPA 51B for combustibles and is applied here to gas testing as well, because a gas cloud from a flange or vent is the main ignition risk once the station is live.

Table 5-1: Hot Work Limits

Requirement	Limit
Permit	Written hot work permit for welding, cutting, grinding, thermite welding and any other ignition source; issued by the Owner after gas-in
Gas test before start	0 % LFL at the work point and within 35 ft, including low points, trenches and enclosures
Continuous monitoring	Calibrated monitor at the work point throughout, bump-tested daily
Alarm	Stop hot work at 10 % LFL; evacuate and remove ignition sources at 20 % LFL; restart only after the source is found and a new test reads 0 %
Oxygen	19.5 % to 23.5 %
Distance to release points	No hot work within 35 ft of an open vent, a flange being broken or a release point; after gas-in, none within 50 ft of VS-101 during venting
Fire watch	Dedicated fire watch during the work and for at least 60 minutes after, with a 20 lb ABC extinguisher and a radio
Extinguishers	At least two 20 lb dry chemical extinguishers within 25 ft
In-service welding	Not permitted on any facility of the receiving pipeline operator. On Owner piping after gas-in only with an approved in-service welding procedure under SPC-SPC-007, EOR approval and an Owner permit
Combustibles	Cleared for 35 ft or covered with fire blankets

6. TRENCHING

Trenching shall comply with 29 CFR 1926 Subpart P. The site soil is red-bed lean clay, which is at best Type B and shall be treated as Type C when wet, fissured, previously disturbed or subject to vibration, pending the geotechnical report (HOLD H-07). Excavations 5 ft deep or more shall have a protective system: sloping to Appendix B (1.5 horizontal to 1 vertical in Type C, 1 to 1 in Type B), benching in cohesive Type B soil only, or tabulated or engineered shoring or shielding. No excavation deeper than 20 ft is expected; one would need a design by a professional engineer.

The competent person shall inspect each excavation daily before work, after every rain and after any event that could change conditions, and shall record the inspection. Spoil and equipment shall stay at least 2 ft from the edge, and trenches 4 ft deep or more shall have a ladder, ramp or steps within 25 ft of travel. Nobody shall work in an excavation where water is accumulating unless it is protected and the water removed, with discharge under the stormwater plan. Excavations near gas facilities shall be tested for hazardous atmospheres. Excavations left open overnight shall be barricaded or covered, with guarded walkways across trenches.

7. HYDROSTATIC TEST STORED ENERGY

7.1. METHOD

The energy stored in a test section is the energy of the compressed water plus the expansion energy of any air trapped by an incomplete fill. The air term is the larger, which is why good filling practice (pigs, high-point vents and fill verification under SPC-SPC-011) is the main control. TORUS followed the stored-energy approach of ASME PCC-2 Article 5.1. The compressed water energy is:

$$E_w = \frac{P^2 V}{2 K_{eff}}$$

and the isentropic expansion energy of trapped air is:

$$E_a = \frac{P_1 V_a}{k-1} \left[1 - \left(\frac{P_a}{P_1} \right)^{\frac{k-1}{k}} \right]$$

The total is converted to a TNT equivalent at 4.184 MJ/kg (1.400 x 10⁶ ft·lbf per lb), and the blast radius is taken at a scaled distance $Z = 40 \text{ ft/lb}^{1/3}$, which corresponds to roughly 1 psi of side-on overpressure:

$$R = Z W_{TNT}^{1/3}$$

The exclusion radius is the larger of R and 100 ft. The 100 ft minimum governs in every case, because fragments from a failed blind or test head and whipping hoses reach farther than the blast.

The inputs are a test pressure of 2,220 psig (the low-point limit of SPC-SPC-011, which is conservative against the 2,195 psig worst calculated low point), $P_1 = 2,234.1$ psia, atmospheric pressure 14.1 psia, an effective bulk modulus $K_{eff} = 250,000$ psi (the 316,000 psi of water reduced for pipe elasticity), $k = 1.4$, and trapped air at 0.5 % of the section volume. Water volumes are those of MEC-CAL-003. The filter separator V-101 and the H-101 coil are isolated from the field tests, so neither is in a field section.

7.2. WORKED CALCULATION FOR TS-01B

Section TS-01B, from the meter skid outlet to SDV-103, holds 1,950 gal, or 261 ft³:

$$E_w = \frac{2,220^2 \times 261 \times 1,728}{2 \times 250,000 \times 12} = 370,000 \text{ ft} \cdot \text{lbf}$$

With 1.30 ft³ of trapped air:

$$E_a = \frac{2,234.1 \times 14.1 \times 1.30}{0.4} \left[1 - \left(\frac{14.1}{2,234.1} \right)^{0.2857} \right] = 801,700 \text{ ft} \cdot \text{lbf}$$

$$W_{TNT} = \frac{370,000 + 801,700}{1.400 \times 10^6} = 0.84 \text{ lb}, \quad R = 40 \times 0.84^{1/3} = 38 \text{ ft}$$

The exclusion radius is therefore the 100 ft minimum.

7.3. RESULTS

Table 7-1 gives all three A6 sections. The low-pressure sections TS-03 to TS-05 store less than 2 % of the TS-01B energy, and the same 100 ft zone is applied to them for simplicity.

Table 7-1: Stored Energy and Exclusion Radius

Section	Water volume, ft ³	Water energy, ft·lbf	Air energy at 0.5 %, ft·lbf	TNT equivalent, lb	Blast radius, ft	Exclusion radius, ft
TS-01A, IJ-101 to SK-110 inlet with PR-101	228	323,700	701,400	0.73	36	100
TS-01B, SK-110 outlet to SDV-103	261	370,000	801,700	0.84	38	100
TS-02, outlet lateral, about 96 ft buried	138	196,200	425,100	0.44	31	100

7.4. RULES

1. The 100 ft exclusion radius applies around every point of the pressurized section, the test pump and the test head whenever the pressure exceeds 50 % of test pressure. Only the test crew stays inside, behind a barrier, and the test station shall never be on the axis of a test head or blind.
2. Below 50 % of test pressure, a 25 ft zone applies for leak inspection after a 10 minute hold, and nobody approaches a leak under pressure.
3. Pressure is raised in stages (25, 50, 75 and 100 %) with holds, and walk-downs for leaks happen only at or below 50 %.
4. Hoses and temporary piping shall be rated for the test pressure with margin and restrained with whip checks; test heads and blinds shall be rated and certified.
5. Barricades, signs and a spotter shall be posted at every approach. The receiving pipeline operator shall be notified if a section under test is within 100 ft of its right-of-way.
6. Depressurization shall be through a controlled valve to a secured discharge, and no fitting shall be loosened under pressure.
7. Pneumatic strength testing of Class 600 piping is prohibited. A pneumatic test of a low-pressure system needs its own stored-energy calculation and exclusion zone in the test procedure.

8. CONFINED SPACES AND LIFTING

8.1. CONFINED SPACES

Table 8-1 classifies the confined spaces on the site. Entry shall follow 29 CFR 1926 Subpart AA, with atmospheric testing in the order oxygen, flammability, toxics; acceptable limits of 19.5 to 23.5 % oxygen, below 10 % LFL, below 10 ppm hydrogen sulfide and below 25 ppm carbon monoxide; continuous monitoring; a trained attendant; and a rescue service able to respond within the time the hazard allows. A rescue team shall be on site for entry into any space that has been purged with nitrogen, because nitrogen gives no warning.

Table 8-1: Confined Spaces

Space	Classification	Hazards	Controls
V-101 filter separator	Permit-required	Nitrogen or gas residue, pyrophoric iron sulfide after service, liquids, limited egress	Blinds or double block and bleed with lockout; purge and ventilate; continuous monitoring; attendant; rescue plan
PR-101 pig receiver barrel	Permit-required if entered (entry is not normal)	Gas, nitrogen, liquids, closure hazards	As above; closure pressure warning interlock verified
T-101 liquids tank	Permit-required	Hydrocarbon vapors, oxygen deficiency	As above; bonding and grounding; Owner permit
H-101 firebox and bath	Permit-required	Combustion gases, heat, liquids	Fuel locked out; cooled down
Valve pits and deep trenches with limited egress	Evaluated; permit-required if a hazardous atmosphere can exist	Gas accumulation	Monitoring
B-101 analyzer shelter	Not a confined space	Gas, calibration gases	Gas detection and ventilation alarm

8.2. LIFTING

All lifting shall comply with 29 CFR 1926 Subpart CC and ASME B30.5, B30.9 and B30.20. The critical lifts are planned in CON-CAL-001. One 200 US ton class all-terrain crane will make them, from two pads: pad A at (68, 69) for V-101 (36,482 lb hook load, 34.7 % of chart) and then SK-110 (47,404 lb, 45.1 %), and pad B at (192, 172) on road R-3 for H-101 (55,656 lb, 53.0 %, the governing lift). A 150 US ton class crane is not acceptable because the 45,324 lb, 34 ft heater would use 87 % of its chart at 40 ft. Each outrigger stands on three timber mats over three, giving about 1,310 psf on the clay. The heater shall be picked from its trailer at no more than 45 ft radius and set at no more than 35 ft without the lift plan being repeated. Each critical lift needs a signed plan reviewed by the Owner, a pre-lift meeting, a lift director and a certified operator.

The crane shall not be set up over buried piping or conduit, inside the operator's right-of-way without its approval, or over backfill less than 30 days old unless it has been proof-rolled and approved. The clearance of 29 CFR 1926.1408 Table A (20 ft for lines up to 350 kV) shall be kept from power lines, or the utility shall de-energize and ground them; the cooperative line extension should be scheduled after the critical lifts. Critical lifts stop at 20 mph sustained wind or the manufacturer's lower limit, and no lift shall pass over live gas piping without an Owner permit and a plan showing the load path.



9. NITROGEN, STAINLESS STEEL AND RADIOGRAPHY

9.1. NITROGEN PURGING AND PRE-PRESSURIZATION

Nitrogen is an asphyxiant with no warning properties, so everyone within 25 ft of nitrogen vents, open pipe ends or excavations during purging shall wear a personal oxygen monitor. Nitrogen shall be vented at VS-101 or at temporary vents at least 10 ft above grade, away from work areas and building intakes, with a 25 ft exclusion zone. The supply (liquid nitrogen vaporizer or tube trailer) shall have a regulator and a relief device set below the design pressure of the system being purged, and the vaporizer shall have a low outlet temperature alarm so that cold nitrogen cannot enter the carbon steel piping below its -20 °F minimum design metal temperature.

The station will be purged with nitrogen and then pre-pressurized with nitrogen before gas is admitted, unless the supply is at 900 psig or less and 60 °F or warmer. The reason is that winter gas at 1,150 psig and 45 °F, throttled into an empty section, cools to about -52 °F. During pressurization, metal temperature shall be measured at the throttle valve and 3 ft downstream every 5 minutes, and the work shall stop at 0 °F; frost on the piping is itself a signal to stop. Nobody shall stand within 25 ft of the throttle valve or the temporary vents. Oxygen monitors shall also be worn inside B-101 and near the T-101 vents during purging, where nitrogen can collect.

9.2. STAINLESS STEEL VENT PIPING

Stainless steel material for the vent system shall be stored off the ground on wood or non-metallic dunnage, apart from carbon steel, and worked only with stainless-only tools, brushes and discs (SPC-SPC-006). Stainless welding fume contains hexavalent chromium, so the Contractor shall provide local exhaust ventilation or respirators based on an exposure assessment under 29 CFR 1926.1126 and include the welders in its air monitoring. Argon used for back purging is an asphyxiant in trenches, enclosures and pipe ends; oxygen shall be monitored where argon can collect, and nobody shall put their head into purged pipe. Pickling or passivation chemicals, if used, shall be handled with acid-resistant equipment, an eyewash within 10 seconds' travel and neutralized waste disposal.

9.3. RADIOGRAPHY

Radiography shall be performed by a contractor holding a current radioactive materials license or reciprocity. The restricted area boundary, where the dose rate exceeds 2 mR in any one hour, shall be roped, signed and lit, and surveyed with a calibrated meter at each setup. Radiography should be scheduled at shift change or at night with the area cleared. Radiographers shall wear personal dosimeters and alarming rate meters and have a source retrieval plan. X-ray or automated ultrasonic testing is preferred where practical, to reduce source handling.

10. WEATHER AND OTHER HAZARDS

10.1. WEATHER

Central s severe weather and summer heat are the most likely causes of injury on this project after the three site-specific hazards. Table 10-1 sets the rules.

Table 10-1: Weather Rules

Hazard	Rule
Lightning	Stop outdoor work when thunder follows lightning within 30 s or a strike is detected within 10 miles; shelter in vehicles or buildings; resume 30 minutes after the last strike. Stop crane work, work at height, hot work, test pressurization and purging
Tornal and severe thunderstorm	Monitor National Weather Service alerts. At a watch, secure materials and suspend lifts; at a warning, go to the shelter identified in the site plan
Heat	Water (1 quart per worker per hour), shade and rest; acclimatization for new workers (20 % exposure on day 1); mandatory breaks and buddy system at a heat index of 91 °F; work and rest schedule with supervisor monitoring at 103 °F
Cold	Cold stress awareness, warming shelters, slip and ice control
Wind	Suspend lifts and roof or canopy panel work above the limits; secure laydown
Wet ground	Stop heavy equipment on saturated clay (CON-RPT-001); protect excavations

10.2. OTHER HAZARDS

Table 10-2 lists the remaining hazards and their controls.

Table 10-2: Other Hazards and Controls

Hazard	Controls
Falls	Full tie-off at 6 ft and above (29 CFR 1926 Subpart M); guardrails on platforms
Energized electrical	Lockout and tagout; NFPA 70E; energized work only with a permit and justification
Stored energy in actuators	The shutdown valve actuators store spring and accumulator energy; lock out to the vendor's procedure and never remove an actuator under stored energy
Pressure equipment during commissioning	Blind and isolation register; no flange broken without verified zero energy
Vehicles	10 mph; spotters; seat belts
Noise	Hearing conservation; exclusion during venting at VS-101
Silica	Controls of 29 CFR 1926.1153 Table 1 for concrete cutting and blasting
Chemicals	Safety data sheets on site for coatings, solvents, cleaners and calibration gases
Wildlife	Awareness of snakes and insects; species measures of REG-RPT-003

Hazard	Controls
Environmental	Spill kits at fuel storage and fueling points; containment; waste segregation; stormwater plan



11. DRUG AND ALCOHOL TESTING AND OPERATOR QUALIFICATION

The Contractor shall maintain a drug and alcohol program meeting 49 CFR 199 for everyone who performs covered functions (operation, maintenance or emergency response on the pipeline, including work after gas-in), and a program meeting the Owner's policy for everyone else, with pre-access, random, post-accident and reasonable-cause testing. Evidence of the program is a bid submission (CON-RPT-002).

Before gas-in, construction is governed by the specifications and inspection. Operator qualification under 49 CFR 192 Subpart N applies to the covered tasks in the Owner's program, which on this project are expected to include purging, pressure testing where the program covers it, valve operation after gas-in, cathodic protection measurements and test lead installation on live pipe, leak detection on live gas, and recognition of abnormal operating conditions (tapping is performed by the receiving pipeline operator). Only qualified individuals shall perform covered tasks; others may work under the direct observation of a qualified individual only where the Owner's program allows it for that task. Qualification records (individual, task, evaluation method, date and expiry) shall be submitted before the task and kept on site. The task list is in CON-RPT-004.

12. EMERGENCY RESPONSE AND INCIDENT REPORTING

12.1. EMERGENCY RESPONSE

Table 12-1 sets out the emergency arrangements.

Table 12-1: Emergency Arrangements

Item	Requirement
Emergency numbers	911; the receiving pipeline operator's gas control (HOLD H-01); the Owner's gas control; the electric cooperative; the one-call center; the National Response Center after gas-in
Nearest hospital and trauma center	Candidate facilities: Memorial Hospital in (emergency department, about 6 to 10 miles by road from the site at the indicative coordinates), and OU Health University of Medical Center in City (s Level I trauma center, about 45 to 50 miles). The Contractor shall confirm both in its site emergency plan before mobilization, with current telephone numbers, the driving route and time from the site gate, and an air ambulance landing zone agreed with the air medical provider serving County
Site location	Posted at the gate and in every vehicle (34.95 N, 97.93 W indicative, HOLD H-02)
Muster points	M1 at the field office; M2 outside the west emergency gate; the upwind point is used
Alarm	Air horn: three long blasts to evacuate, one long blast for all clear
Gas release after gas-in	Emergency shutdown push buttons HS-201 to HS-204, operated by qualified personnel; evacuate upwind; no vehicle started in the cloud
Fire	Fight only an incipient fire that is safe to fight; otherwise evacuate and call 911
Injury	First aid; call 911; meet responders at the county road entrance
Spill	Contain; report to the Owner; follow the stormwater and spill plans (REG-RPT-004)
Drills	An evacuation drill within the first two weeks; a gas release drill before gas-in, with the local fire department invited
Local responders	Liaison with the local fire department and sheriff before construction, arranged by the Owner

12.2. INCIDENT REPORTING

All incidents and near misses shall be reported to the Contractor's supervisor and the Owner's Representative at once, and in writing within 24 hours. Fatalities shall be reported to OSHA within 8 hours, and in-patient hospitalization, amputation or loss of an eye within 24 hours (29 CFR 1904.39). After gas-in, incidents meeting the definitions of 49 CFR 191.3 are reported by the Owner to the National Response Center at the earliest practicable moment and within one hour of confirmed discovery (49 CFR 191.5), with written reports as required, and to the s pipeline safety department (TBV for timing); the Contractor shall support these reports. Any contact with the trunkline or its coating shall be reported to the operator immediately, and

environmental releases are reported by the Owner under REG-RPT-002 and REG-RPT-004. The Contractor shall lead investigations with the Owner, analyze root causes for recordable injuries and high-potential near misses, and track corrective actions to closure.

12.3. MONITORING

The Contractor shall target zero recordable injuries, audit job safety analyses twice a week and permits weekly, report leading indicators (near misses, stop-work events and audits) monthly, and issue a monthly HSE report of hours, incidents, audits and corrective actions.

13. SUMMARY AND OPEN ITEMS

This plan concentrates the controls where this site's risk lies: excavation near the live trunkline, the stored energy of the hydrostatic tests, and the hazards of nitrogen and cold metal at gas-in. The hydrotest calculation confirms that a 100 ft exclusion zone covers every field test section, with the calculated blast radius no more than 38 ft. Before mobilization, the Owner shall obtain from the receiving pipeline operator its excavation limits, crossing load limits, representative requirements and emergency number (HOLD H-01, H-04), and the Contractor shall confirm the nearest hospital and trauma center. The trenching classification awaits the geotechnical report (HOLD H-07).

